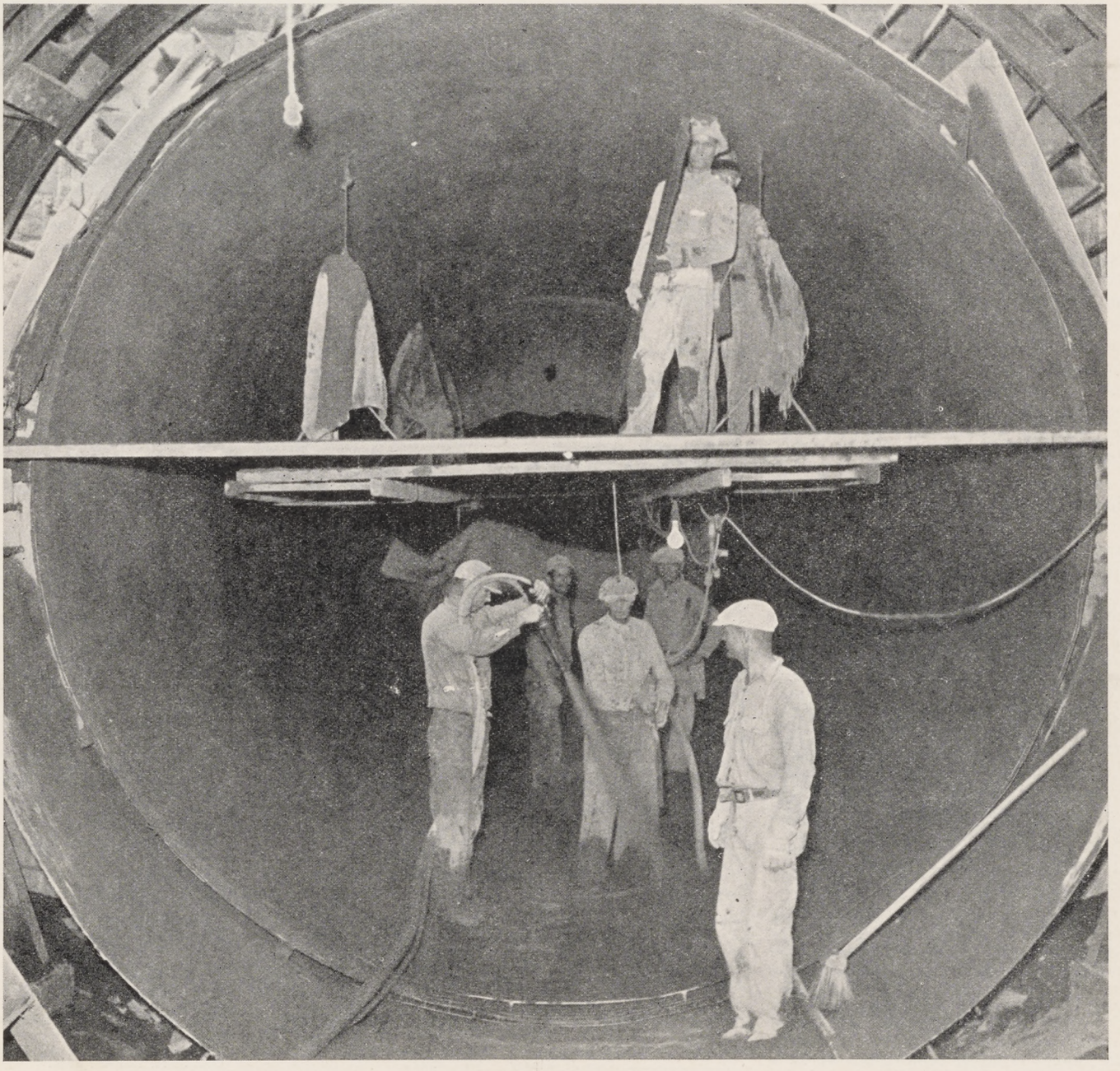
• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. IV NOVEMBER 10, 1937 No. 21



Shooting gunite lining in Cajalco Outlet Tunnel. **See note page 2.**

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AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

306 WEST THIRD ST.
LOS ANGELES, CALIFORNIA

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. IV November 10, 1937 No. 21

55-Million Dollars Paid in Aqueduct Pay Checks

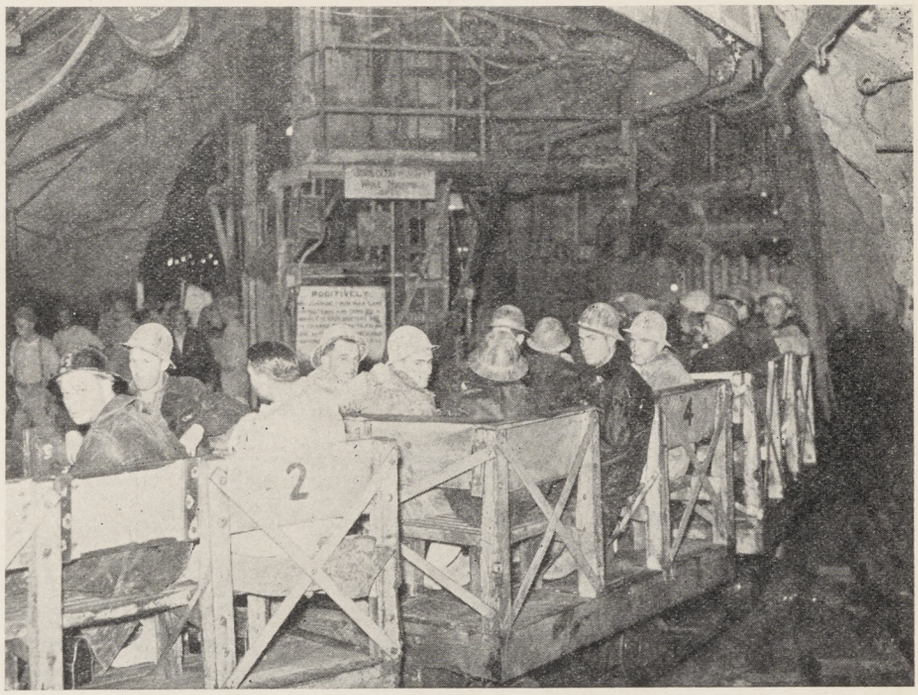
Construction of the Colorado River Aqueduct has already resulted in 55 million dollars worth of direct employment benefits, according to cost reports prepared on November 1, 1937.

With the entire project approximately 70 per cent completed as of that date, records indicate that more than 33,000 people have been directly employed in the building of the aqueduct, and pay checks amounting to $55,000,000 have been distributed to these employees. District employment regulations require that all aqueduct employees must have been residents of some one of the M.W.D. cities for a year prior to their employment.

In addition to the thousands of men directly employed on the aqueduct, Southern California labor in general has been materially aided by the manufacture of the large quantities of materials and supplies that are being used on the job. Purchasing Department records show that by November 1, approximately 46,000 carloads of materials have been forwarded to the construction work. It is estimated that about $16,000,000 worth of these materials have been manufactured in Southern California. The largest single items of materials used in the aqueduct construction are 7½ million barrels of cement, and 283,500 tons of steel.

THE COVER

The Cajalco Outlet Tunnel shown on the cover of this issue will carry water from the reservoir to the distribution pipe lines. It has a lined length of 2,341 feet and a lined diameter of 14 feet. The lining consists of a steel cylinder which is backed up with concrete and coated on the inside with two inches of gunite. The tunnel is being constructed by Broderick and Gordon who have a subcontract with the Griffith Company.



Tunnel crew coming off shift arrive at the bottom of the Potrero Shaft. The picture illustrates one of the types of man-cars used in the San Jacinto Tunnel.

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(Main Aqueduct Tunnels)

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San Jacinto Tunnel, District Force Acct., B. C. Leadbetter, Gen. Supt.; S. J. Shrode, John Austin and C. E. Sides, Tunnel Supts.; Chas. F. Thomas, Jr., Supt.; F. A. Backman, Gen. Foreman.

(Distribution Tunnels)

Monrovia Tunnels Nos. 1, 2 and 3, West Construction Co., H. E. Carleton, Gen. Supt.; E. M. Penn, Concrete Supt.

Monrovia Tunnel No. 4, L. E. Dixon Co., Bent Bros., Inc., and Johnson, Inc., W. N. Evans, Supt.

(Canal, Siphon, Conduit)

Schedules Nos. 12 and 12A, Three Companies, Inc., John Will, Supt.

Schedules Nos. 14, 15 and 16, Thompson - Starrett Co., Inc., Rodney Smith, Gen. Supt.; William Hayes, Excav. Supt.

Schedules Nos. 18, 19 and 20, J. F. Shea Co., Inc., J. G. Shea, Gen. Mgr.; H. F. Rennebohm, Supt.

(Distribution Pipe Line)

Schedules No. 1P and 3P, American Concrete & Steel Pipe Co., Wm. A. Whiting, Gen. Supt.; D. H. Rankin, Plant Supt. and Const. Supt.

Schedules 6P and 7P, J. F. Shea Co., Inc., J. G. Shea, Gen. Mgr.; Ed. H. Shea, Gen. Supt.

Schedule 9P, 10P, 11P, United Concrete Pipe Corp., John Huber, Plant Supt.; Roy Richards, Construction Supt.

Schedules 2B and 2S, Western Pipe & Steel Co., L. L. White, Supt.

Schedules 8C, 9C, 12C, Basich Bros.; Tom Gogo, Supt.

Schedules 21SC, 22SC, 23SC, J. F. Shea Co.

(Dams)

Cajalco dam, The Griffith Co., Fronz Fohl, Gen. Supt.

Parker Dam, J. F. Shea Co., Frank Crowe, Gen. Supt., E. A. Moritz, Constr. Eng., U.S.B.R.

Gene Wash dam, Copper Basin dam, J. F. Shea Co., Frank Crowe, Gen. Supt.

(Pumping Plants)

Intake and Gene, Winston Bros. and Crowell, R. A. Crowell, Supt.; F. T. Hillman, Engr.

Eagle Mountain, L. E. Dixon Co.; J. H. Larkin, Supt.

Hayfield, Dixon and Case; Crawford Strohacker, Supt.

M. W. D. Inspector Bill Hulings and Foreman Benny Davis get set to dump the first bucket of concrete for the Gene Wash Dam.

First Concrete Placed in Gene Wash Dam

Placing of concrete in the Gene Wash dam was started on October 23. Three-hundred forty-seven cubic yards of concrete were placed on that date and the dam was raised seven feet, from elevation 608 to 615. Being constructed by the J. F. Shea Co. under the general supervision of Frank Crowe, this dam is being built for the District under Specifications 190. The same specifications and contract include the construction of the Copper Basin dam.

An interesting feature of the Gene Dam is the mat of steel rails laid on the foundation, and which will be extended up both sides of the canyon. This reinforcing mat which follows the perimeter of the arch section is designed to prevent cracking of the arch section from the bottom. The mat is placed in three layers which are staggered and are 9 inches apart, and the steel rails in each layer are 24 inches apart. The 40-pound steel rails being used were all taken from the track used in the construction of the Coachella Tunnels. The same type of construction will be used on the Copper Basin dam, and approximately 40,000 lineal feet of rail will be required for the two dams.

Gene Wash dam will have a maximum height of 137 feet, and will be 423 feet long across the crest, which includes a gravity section as well as the arch section. The dam is 26 feet thick at its base.

October Progress 901 Ft. in San Jack

Averaging 29.0 feet per day of main heading excavation in October, San Jacinto tunnel crews under the direction of Supts. C. E. "Tim" Sides at Cabazon, and S. J." Jack" Shrode at Potrero are really going to town. This average which totals the average daily progress of 21 feet at Cabazon and 8.0 feet at Potrero, is 7.9 feet per day better than the average established since the District has been driving the tunnel.

Just to show that they were only getting well started in October, the Cabazon crews averaged 27.3 feet per day during the first eight days of November, and the Potrero crews hit an average daily progress during those eight days of 15 feet. On November 6, the Cabazoneers drove 36 feet, and on the same date the Potrero gang drove 25 feet, which is good going in anybody's tunnel.

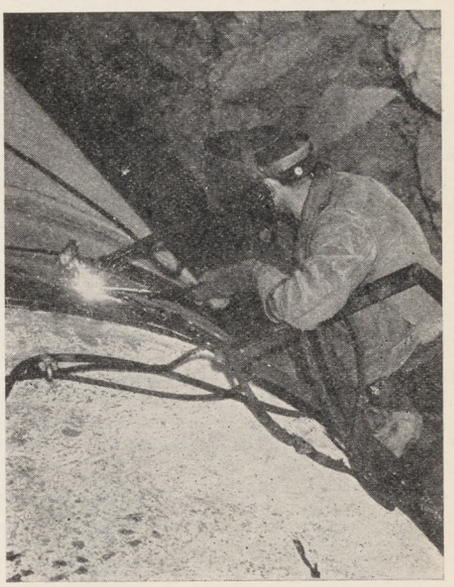
Things are also moving right along at the Lawrence adit, where on October 31, Supt. John Austin's crews hit the bottom of that long incline and flattened out for the final 200 feet of home stretch to the line of the main tunnel. This flat section of the adit is being excavated in an enlarged section which is 19 ft. x 20 ft. The total vertical drop in the Lawrence adit, which is 5651 feet long, is 1324 feet.

Bids To Be Opened For 152 Miles of Aqueduct Fences

Bids are to be opened on November 15, 1937, for the construction of approximately 152 miles of fence to be erected along aqueduct construction work. Totaling 812,400 lineal feet of woven wire fence and 215 gates, the fencing will be installed along the open canals, and around the Gene Wash, Copper Basin, Hayfield, and Cajalco Reservoirs, and around the Camino switching station. Aqueduct noon-hour statisticians have been busily engaged in computing the number of desert jack rabbits who are going to be barred from free aqueduct water by these fences. On the basis of two bunnies per linear foot of fence (Ed. Note: Figures deleted out of respect for the S.P.C.A.).

Other bids to be opened in the near future include No. 247, to be opened on November 22, and No. 248 to be opened on December 13. No. 247 provides for furnishing and erecting a steel suspension foot bridge from the reservoir bank to the Cajalco Outlet Tower. No. 248 provides for furnishing telephone exchange equipment for use at the aqueduct pumping plants.

Bids will also be opened on November 22 for the construction of 3 miles of road in the vicinity of the Cajalco Reservoir.



Workmen arc-welding joints of gunite-coated steel pipe section in distribution schedule 2S. See picture page 6.

TUNNELS

October 1 to 31, 1937

TUNNEL EXCAVATION (MILES)

	Completed	Remaining
Aqueduct	88.53	3.58
Distribution	16.20	0
Total	104.73	3.58

TUNNEL LINING (MILES)

	Completed	Remaining
Aqueduct	83.92	8.19
Distribution	12.84	3.31
Total	96.76	11.50

AQUEDUCT

CONTRACTOR	TUNNEL	LENGTH IN FEET	EXCAVATION IN FEET: NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING	LINING IN FEET: ARCH OR INVERT	NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	SAN JACINTO	(68,849)			(901)	(49,961)	(18,888)				(1,925)	(25,563)	(43,286)
	Cabazon Shaft to East Portal	8,880		Completed		8,880	0	Arch	0	0	0	8,484	396
	Cabazon to Lawrence	26,817	93	7.0	655	17,544	9,273	Invert*	0	0	0	8,484	396
	Cabazon Pioneer	18,119		Suspended		7,274	0	Arch	50	44.3	2,214	2,214	24,603
	Lawrence Adit	5,651	93	3.6	336	5,462	189						
	Potrero Pioneer	15,195		Suspended									
	Potrero to Lawrence	17,670	93	2.6	246	8,055	9,615	Invert*	8	96.0	768	1,246	16,424
	Potrero Shaft to West Portal	15,482		Completed		15,482	0	Arch	0	0	0	14,953	529
								Invert*				15,482	0
	TOTALS Ft.	68,849	186	4.8	901	49,961	18,888	Arch	50	44.3	2,214	25,651	43,198
	Miles	(13.04)				(9.46)	(3.58)	Invert	8	96.0	768	25,212	43,637

DISTRIBUTION

GRIFFITH CO.	CAJALCO OUTLET	2,368		Completed	2,368	0				0	2,341	0
WEST CONSTRUCTION CO.	MONROVIA NO. 1 (FromW.P.)	7,868		Completed	7,868	0			Completed		7,796	0
	MONROVIA NO. 2 (FromJct.1)	940		Completed	940	0			Completed		856	0
	MONROVIA NO. 3	(32,105)		Completed	(32,105)	(0)				(2,329)	(17,483)	(14,612)
	East from Adit	11,340			11,340	0	Full Sec.			0	11,284	
	West from Adit				5,913		Invert*			0	19,352	1,459
	From West Portal	20,765			14,851	0	Arch	63	46.2	2,911	2,911	17,900
DIXON, BENT BROS. & JOHNSON	MONROVIA NO. 4 (FromW.P.)	8,133		Completed	8,133	0		24	7.3	175	5,275	2,858
	SAN RAFAEL No.1 (FromW.P.)	4,047		Completed	4,047	0			Completed		4,028	0
	SAN RAFAEL No. 2 (FromE.P.)	5,669		Completed	5,669	0			Completed		5,661	0
	TOTALS Ft.	61,130			61,130	0	Full	87	28.8	2,504	43,440	17,470
	Miles	11.58			11.58	0	Section			(0.47)	(8.22)	(3.31)

*Invert considered to equal 0.2 completed section

Miscellaneous Construction

Oct. 17 to 30, 1937

AQUEDUCT PUMPING PLANTS AND APPURTENANT WORKS

CONTRACTOR	FEATURES	EXCAVATION—Cu. Yds. Est. Quan.	Period	To Date	%	CONCRETE—Cu. Yds. Est. Quan.	Period	To Date	%	STEEL—Tons Est. Quan.	Period	To Date	%
WINSTON BROS. CO. & WILLIAM C. CROWELL	Intake Plant	128,930	0	128,930	100	23,060	1,169	21,221	92	1,714	30.3	1,510.5	88
	Gene Plant	89,306	0	89,306	100	13,907	986	13,810	99	2,003	0.4	1,970.5	98
WOOD AND BEVANDA	Iron Mt. Plant	354,909	0	354,909	100	22,942	0	22,942	100	1,796	0	1,795.7	100
L. E. DIXON CO.	Eagle Plant	268,681	527	260,303	97	27,625	1,192	24,059	87	2,253	53.5	1,634.5	72
L. E. Dixon & Case Const. Co.	Hayfield Plant	352,775	433	347,139	98	31,408	1,630	21,671	69	2,809	458.4	1,254.0	45
	TOTALS		960	1,180,587			4,977	103,703			542.6	8,165.2	

PARKER RESERVOIR—SIX COMPANIES, INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnels—Excav.	3,463 Ft.	0	3,463	100
Diversion Tunnels—Concrete	3,363 Ft.	0	3,363	100
Cofferdams—Excav.	227,582 C.Y.	0	227,582	100
Cofferdams—Fill	464,890 C.Y.	0	464,890	100
Outlet Works—Excav.	220,000 C.Y.	0	207,176	94
Outlet Works—Concrete	5,000 C.Y.	167	3,589	72
Dam—Excavation	1,502,000 C.Y.	0	1,474,379	98
Dam—Concrete	297,900 C.Y.	32,587	159,390	53
Power House—Excav.	58,000 C.Y.	1,300	56,700	98
Power House—Concrete	14,000 C.Y.	0	0	0

GENE WASH RESERVOIR—J. F. SHEA CO., INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Dam—Excavation	7,500	0	7,500	100
Dam—Concrete	13,365 C.Y.	347	347	3
Spillway—Excavation	4,762	0	4,762	100
Spillway—Concrete	3,200 C.Y.	1,437	3,035	63
Dike—Excavation	4,000 C.Y.	0	1,840	46
Dike—Fill	10,500 C.Y.			
Dike—Concrete	1,200 C.Y.	0	200	17

CAJALCO RESERVOIR—GRIFFITH COMPANY

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnel	2,000 Ft.	0	2,000	100
Outlet App. Channel—Exc.	199,190 C.Y.	0	199,190	100
Outlet Tower—Concrete	3,110 C.Y.	31	3,060	99
Dam & Spillway—Exc.	757,800 C.Y.	300	685,250	91
Dam—Fill	3,463,300 C.Y.	147,250	3,029,800	87
Dam & Spillway—Concrete	28,000 C.Y.	2,200	20,150	81
Dike—Excavation	13,700 C.Y.	0	13,680	99
Dike—Fill	3,900,000 C.Y.	0	3,855,500	99
Dike—Concrete	44,100 C.Y.	480	42,160	96

BOULDER TRANSMISSION LINE—FRITZ ZIEBARTH

FEATURES	Length-Line Mi.	Period	To Date	Percent
Footings Constructed	237.0	0	237	100
Towers Erected	237.0	0	237	100
Wire Strung	237.0	0	237	100

COPPER BASIN RESERVOIR—J. F. SHEA CO., INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Dam & Spillway—Exc.	13,500 C.Y.	0	10,300	76
Dam & Spillway—Conc.	14,725 C.Y.			

TION PROGRESS

CANAL, CONDUIT, SIPHON & PIPE LINES

October 17 to 30, 1937

CANAL, CONDUIT AND SIPHON (MILES)

	Completed	Remaining
Excavation	141.61	3.99
Concrete	138.01	6.54
Back Fill	72.63	8.20

DISTRIBUTION PIPE LINE (MILES)

	Completed	Remaining
Excavation	45.89	0.42
Concrete	45.80	0.51
Back Fill	43.86	2.26

AQUEDUCT

SCHED. NO.	CONTRACTOR	FEATURES	Length In Feet	EXCAVATION—Feet			CONCRETE—Feet			BACKFILL—Feet		
				Period	To Date	Remain'g	Period	To Date	Remain'g	Period	To Date	Remain'g
12	THREE COMPANIES, INC.	Conduit and Siphons	32,977	0	32,977	0	0	32,977	0	0	31,338	0
14	THOMPSON-STARRETT CO.	Conduit and Siphons	32,366	0	32,366	0	0	32,366	0	0	32,366	0
15		Conduit and Siphons	35,849	0	35,849	0	0	35,849	0	0	35,849	0
16		Conduit and Siphons	19,254	490	11,134	8,120	2,666	6,053	13,201	1,975	2,950	16,304
18	J. F. SHEA CO., INC.	Conduit and Siphons	27,537	0	27,537	0	0	27,537	0	0	27,327	210
19	J. F. SHEA CO., INC.	Conduit and Siphons	37,105	3,150	24,176	12,929	2,170	16,538	20,657	0	11,384	25,721
20		Siphons	18,618	0	18,618	0	0	18,618	0	0	18,618	0
20 A & B	M. W. D.—FORCE ACCT.	Siphons	752	0	705	47	0	0	752	0	0	752
3	WINSTON BROS. CO. & WILLIAM C. CROWELL	Siphon (Gene Inlet)	1,877	0	1,877	0	0	1,860	17	0	1,478	320
4		Siphon (Copper Basin)	450	0	450	0	0	450	0	0	0	0
	TOTALS		206,785	3.640	185,689	21,096	4,836	172,248	34,537	1,975	161,310	43,307

DISTRIBUTION PIPE LINES

1	AMER. CONC. & STEEL PIPE CO.	Precast Concrete Pipe	12,277	977	12,027	250	2,728	12,015	262	2,800	10,652	1,625
2	WESTERN PIPE & STL. CO.	Welded Steel Pipe	54,530	0	54,530	0	0	54,530	0	414	50,332	3,169
3	AMER. CONC. & STEEL PIPE CO.	Precast Concrete Pipe	20,124	0	20,124	0	0	20,124	0	0	20,124	0
4			25,867	0	25,867	0	0	25,867	0	0	25,867	0
5			24,892	0	24,892	0	0	24,892	0	0	24,892	0
6	J. F. SHEA CO., Inc.	Precast Concrete Pipe	27,294	0	27,294	0	0	27,294	0	0	25,838	1,956
7			30,044	1,475	29,323	721	1,512	29,080	964	1,050	27,416	2,628
9	UNITED CONC. PIPE CORP.	Precast Concrete Pipe	8,697	0	8,388	309	0	8,396	301	0	7,863	834
10			10,517	0	10,517	0	0	10,517	0	0	10,450	67
11			4,105	0	4,105	0	0	4,105	34	0	3,197	908
9C-9C-12C	BASICH BROTHERS	Cast-in-Place Conc. Pipe	1,656	40	708	948	80	486	1,170	0	403	1,253
	TOTALS		220,003	2,492	217,775	2,228	4,320	217,272	2,731	4,264	207,034	11,940

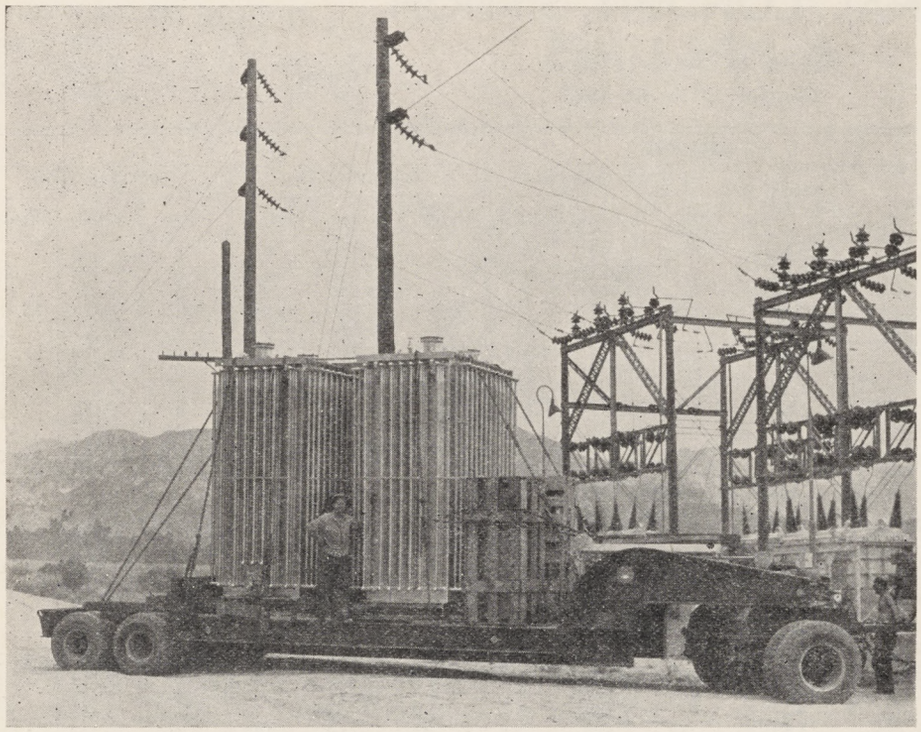
Completed Features

TUNNELS

	CONTRACTOR	TUNNEL	Length in Miles	Work Started	Work Completed
AQUEDUCT	MORRISON-KNUDSEN CO.	Mecca Pass, No. 1, 2 & 3	1.13	7-17-33	2-10-35
	WEST CONSTRUCTION CO.	Whitewater Nos. 1 & 2	1.94	7-18-33	4-15-35
	SHOFNER & GORDON	Hayfield No. 2	1.03	7-8-33	7-27-35
	HAMILTON & GLEASON	Bernasconi	1.18	4-19-33	11-21-35
	J. F. SHEA CO., INC.	Cottonwood	3.81	6-14-33	12-29-35
	HUNKIN-CONKEY CON. CO.	Hayfield No. 1	1.84	10-21-33	1-9-36
	DIXON & BENT BROS.	W. Eagle—West Portion	2.02	9-8-33	3-12-36
	DRAVO CONTRACTING CO.	Valverde	7.20	6-7-33	10-18-36
	WALSH CONSTRUCTION CO.	Colorado River	1.04	3-2-34	1-29-36
	WALSH CONSTRUCTION CO.	Copper Basin Nos. 1 & 2	2.32	10-4-33	2-20-36
	WALSH CONSTRUCTION CO.	Whipple Mountain	6.11	8-25-33	1-26-37
	UTAH CONSTRUCTION CO.	IronMt.—West Portion	3.07	5-15-33	10-23-36
	WINSTON BROS. CO.	Iron Mt.—East Portion	4.48	8-9-33	10-30-36
	METRO. WATER DIST.	1000 Palms No. 1	3.04	1-25-33	1-7-37
	" " "	1000 Palms No. 2	0.73	2-24-33	12-19-35
	" " "	Wide Canyon No. 1	2.71	3-31-33	2-11-37
	" " "	Wide Canyon No. 2	0.16	3-24-33	2-12-37
	" " "	Seven Palms	3.17	4-27-33	2-2-37
	" " "	Long Canyon	2.90	3-6-34	12-31-36
	" " "	Blind Canyon	1.29	3-22-34	12-3-36
	" " "	Morongo No. 1	1.08	4-21-34	1-20-37
	" " "	Morongo No. 2	0.36	12-29-34	1-5-37
	BRODERICK & GORDON	West Eagle Mt.—E. Portion	3.00	2-8-34	5-6-37
	WINSTON BROS.	Coxcomb	3.37	9-15-33	4-26-37
	METRO. WATER DIST.	East Coachella	18.30	1-25-33	5-8-37
	BRODERICK & GORDON	East Eagle Mt.	1.79	6-8-34	7-23-37
		TOTALS	79.07		
DISTRIBUTION	J. F. SHEA CO., INC.	Sierra Madre	1.27	9-1-35	10-31-36
	DIXON, BENT BROS. & JOHNSON	Pasadena Extension	1.05	10-5-35	11-24-36
	DIXON, BENT BROS. & JOHNSON	Pasadena	2.30	2-11-35	4-29-37
		TOTALS	4.62		

CANAL, CONDUIT, SIPHON, AND PIPE LINES

	CONTRACTOR	FEATURE AND NAME OR SCHEDULE	Length in Miles	Work Started	Work Completed
AQUEDUCT	UNITED CONCRETE PIPE CORP.	Little Morongo Siphon	0.13	2-27-34	8-20-34
	METRO. WATER DIS.	Fan Hill Conduit and Siphon	0.32	10-21-33	11-19-34
	MORRISON-KNUDSEN CO.	Sch. No. 18-J, Big Morongo and San Andreas Siphon	1.86	2-12-35	9-16-36
	GRIFFITH COMPANY	Sch. No. 20-C, 21, 22, 23 & 23-A	12.79	1-5-35	10-13-36
	JAHN & BRESSI CONST. CO.	Sch. No. 5, Canal and Siphons	10.15	12-18-34	11-17-36
	JAHN & BRESSI CONST. CO.	Sch. No. 4, Canal and Siphons	10.08	6-6-35	3-18-37
	UTAH CONSTRUCTION CO.	Sch. No. 9, Canal, Conduit & Sip.	8.97	12-12-34	5-15-37
	BARRETT-HILP & MACCO CORP.	Sch. No. 2, 3, 7, Canal, Con. & Sip.	18.71	12-3-34	5-25-37
	METRO. WATER DIST.	Sch. No. 17, Conduit and Siphons	4.16	9-9-35	6-15-37
	AQUEDUCT CONST. CO	Sch. No. 1,10,11,13 Canal, Con. & S.	26.99	1-24-35	6-24-37
	WOOD & BEVANDA	Sch. No. 6, 8, Canal & Siphons	12.28	11-27-34	7-28-37
		TOTALS	106.44		
DISTRIBUTION	UNITED CONCRETE PIPE CORP.	Sch. No. 8P, Precast Concrete Pipe	4.65	2-21-36	3-20-37



Another use for the fifty-ton trailer purchased by the District to haul pumping plant equipment. This time it is carrying a load of transformers for the Lakeview substation on the construction power line.

Credit Union Gets Flying Start

"Off with a bang!" is the report of the Employees' Credit Union. "We have money in the treasury, and we are ready to receive customers."

Recently organized (NEWS, October 25), the Credit Union's Board of Directors consists of Chairman, H. A. Beall; Vice-Chairman, G. E. Farmer; Treasurer, C. G. Olson; Secretary, Ruth Thiers, and C. J. Brandt.

Sufficient deposits have already been made by new members to allow the credit group to make unsecured loans up to $50, and secured loans in excess of $50. New members may join the Credit Union by paying a membership fee of 25 cents, and agreeing to save at least 25 cents per month through the purchase of shares in the Union. The rate of interest paid to members on their deposits will depend on the Union's earnings, which in turn depend upon the loans made.

Other officers of the credit Union include C. C. Elder, George Swanman, and S. F. Coghlan who compose the Credit Committee, and Gregory Smith, Donald Keith, and Ezra Rider who make up the Advisory Committee. Application for loans should be made to the Treasurer, C. G. Olson, who is in the Auditing Division in the L. A. Office. General information regarding the Credit Union may be obtained from any of the committeemen.

Safety Program Results Outlined

In a paper which he presented at the California Institute of Technology on November 1, 1937, M.W.D. Safety Engineer T. W. Osgood pointed out a number of the important principles which have been adhered to by the District in its safety program during the construction of the aqueduct.

The most significant result of the application of these principles is the fact that " . . . these various concerted safety activities on the aqueduct work have resulted in an average annual reduction of 28 per cent in the accident rate, and the rate for the past twelve months is 30 per cent below that for heavy construction in California for a five-year period." These figures include both force account and contract work.

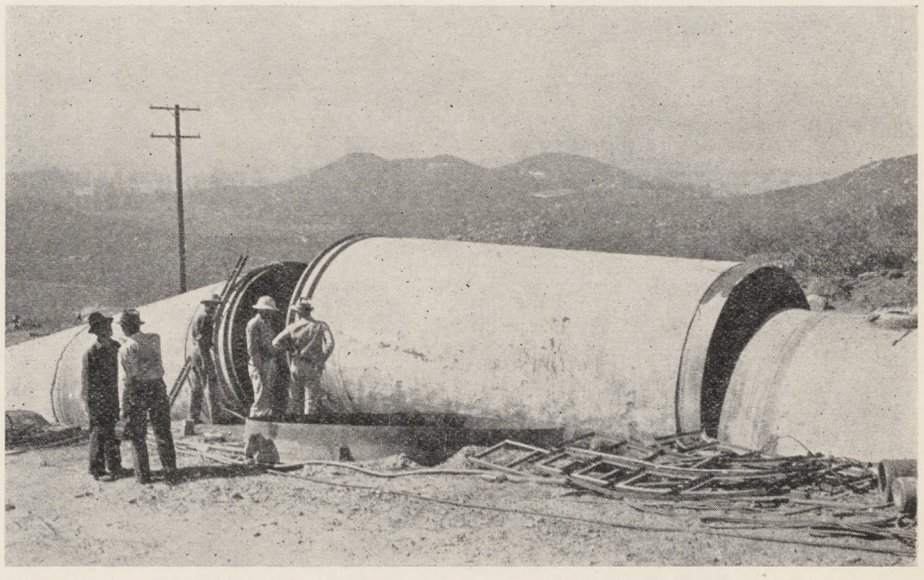
Before the aqueduct construction work was started, the Board of Directors adopted this policy:

"The application of every possible safety measure shall be practiced."

Mr. Osgood stated that this policy has been carried out through the effort and cooperation of all executives and down to include the individual workmen. "Such executive interest, support, and enforcement of corrective practices," he said, "are absolutely requisite to any successful safety program.

"The most important single feature in the safety program, is the development of the safety spirit within the organization as a whole.

"The prevention of accidents is fully justified by the consequences which include personal injury as well as monetary loss."



Last section of steel pipe being placed on the top of Pedley Hill in distribution schedule 2S. This steel pipe line is approximately 10 miles in length and forms one of the links in the upper feeder. Running north from Arlington, near the Cajalco Reservoir, this line crosses the Santa Ana River on a steel bridge. It is being constructed for the District by the Western Pipe and Steel Company.

NEWS FROM FIELD AND OFFICE

C. R. Clapp and his trusty truck who make semi-weekly trips between Banning and the River carrying mail and supplies. The picture was taken on the day that the truck's speedometer registered 100,000 miles.

Chainman T. B. Chisholm has been transferred from Division 2 to Division 5.

* * *

The Long Beach Press-Telegram announces that B. W. Hicks has been recently appointed as Street Superintendent for the City of Long Beach. Byron Hicks resigned from the District on October 29, having been an inspector on the construction of the Intake and Gene pumping plants. He was originally employed on the Distribution Division in December, 1935.

* * *

Employees of the Los Angeles office were startled the other day when one of the politicos, G. E. Farmer, President of the Employees Association, began passing out cigars and candy. It didn't seem in the cards for a politician to be passing out such items after he had been successfully elected to office. Amazed recipients were promptly and proudly informed by the donor that the gifts were in celebration of the arrival in the Farmer household on November 2, 1937, of Jean Marie Farmer—weight 6 pounds, 7.50001 ounces. Farmer, who works in the Electrical-Mechanical Division, is now back to normal and isn't kissing any babies except his own (no wise cracks about those that are old enough to vote.)

Aqueduct Temperatures

Oct. 15 to Oct. 31

	Max.	Min.
Div. 1	99°	59°
Div. 2	96°	57°
Div. 3	97°	57°
Div. 4	94°	69°
Divs. 5 and 6	93°	40°

Division 3 engineering employees who have recently been transferred to engineering work on Division 4 include the following:

Engineer D. C. Walker, Chainman E. L. Civerolo, Inspector Charles L. Crow.

Inspector Robert W. Doyle, Instrumentman Jay C. Dyas, Inspector A. B. Harrison.

Inspector Courtland Munn, Inspector Ralph Perkins, Chainman Herbert D. Shuler.

Chainman L. C. Smiley, Chainman P. E. Tope, Inspector L. D. Ward, and Assistant Engineer T. N. Whitford.

* * *

Sue West has been transferred from the Legal Division to the Compensation Claims Division.

* * *

Conrad Sangren, formerly in the Purchasing Division is now in the Operating Division.

* * *

Nadene Harvey has moved upstairs from the Accounting Division to the Disbursing Office.

* * *

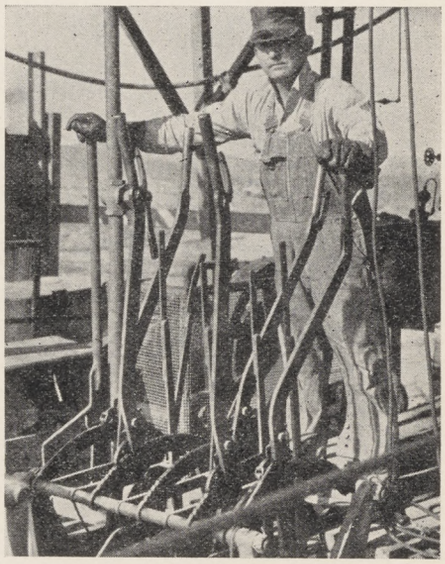
Engineer Ezra B. Rider has been transferred from the Construction Division to the Design Division.

* * *

The Pasadena Post reports the finding of an old newspaper clipping dated April, 1919, and telling of the organization of the American Legion in California. One of the members of the organization committee was James H. Howard of Pasadena. Mr. Howard is now Chief Counsel for the Metropolitan Water District.

* * *

John J. Zapp, who is a District inspector on the construction of Monrovia tunnel No. 3, has been awarded a prize as a result of his entry in the National Safety Contest conducted by the National Safety Council. The award was in connection with the contest announced on the M.W.D. safety calendars which are distributed along the job.



And they're putting automatic gear shifts on automobiles to make driving easier. Standing behind this grill-work of levers is Tom Gray, operator of the giant gantry crane used in placing precast concrete pipe sections on distribution schedule 1P being constructed by the American Concrete and Steel Pipe Co.

Inspector K. G. Albin has moved from the Distribution Division to Division 5.

* * *

Instrumentman R. E. Hamilton has been transferred from Division 1 to Divisions 5 and 6.

* * *

General Clerk Fred Fauble has been transferred from the Distribution Division to the Labor Employment Office.

* * *

Bill Sheffey, general storekeeper at Banning, and Harry Keeler, buyer in the Purchasing Division, recently returned from a fishing trip up in Oregon. The NEWS ordinarily will not print the result of fishing trips if unaccompanied by photographic evidence. Such evidence was submitted by the fishermen, although too late to make this issue. Skeptical customers will be put at ease in the near future. One of the odd things about the expedition is that Bill was being "shown how" by Harry—Bill not being a member of the Isaac Walton League, while Harry is an old-timer at the art. And yet, the pictures show Bill with a fish that it would take a derrick to hoist, while Harry's prize looks like maybe he was using it for bait.

5000 Still Employed On Various Features

In spite of the fact that construction of the aqueduct is now approximately 70 per cent completed, a check through the weekly progress reports submitted to the General Manager and Chief Engineer by the various Division Engineers and Construction Superintendents reveals that there are still nearly 5000 people working on the "big job".

A few more than five hundred of these men are working at Parker Dam, where work is going ahead on a three shift basis on the construction of the "deepest dam in the world" which will divert water into the aqueduct. Concrete is being placed in the dam at the rate of 17,500 cubic yards per week, and at the end of the week of October 30, 159,390 cu. yds. had been placed, and the highest part of the dam was at elevation 340, which is 204.6 feet above the lowest point in the foundation. First concrete in the dam was placed on July 29, 1937.

In the same vicinity, Winston Brothers and Crowell are employing approximately 250 men in the construction of the Intake and Gene pumping plants. On October 30, the concreting was completed for the pumphouse walls and roof slab at the latter plant. Farther west at the Eagle Mountain pumping plant, the L. E. Dixon Co. has about 160 men on its payroll. By October 30, these crews had completed the laying of the tracks and 60 per cent of the ballasting for the incline railway which goes up the steep side of the 433-foot pump lift, as well as other work on the plant.

Jumping to the west end of the main aqueduct the reports show that concreting of the 145-foot Cajalco Outlet Tower was completed on October 23, and that on October 30 a total of 3,006,300 cubic yards of earth had been placed on the Cajalco dam, 70,600 cubic yards having been placed during the week, and bringing that part of the job to the 88 per cent completed mark. The Griffith Company, and its subcontractors at the reservoir employ an average of 500 men.

A comparison of totals shows that the Distribution Division employees the greatest number of aqueduckers, with approximately 1200 M.W.D. and contract employees. The largest number of workmen on any one feature are at the San Jacinto tunnel, which on October 30, employed 1071.

Who's Who On the Aqueduct

R. H. Richards

L. W. Irwin

J. P. Densmore

ROY H. RICHARDS

Superintendent of Construction, United Concrete Pipe Co. Distribution Schedules 9P, 10P, and 11P.

Born in Tucson, Arizona, March 23, 1898 . . . Lists School of Experience as his Alma Mater . . . 1914-1917 employed by the Lee Moor Contracting Company, El Paso, Texas, as a construction foreman . . . 1917-1919 Foreign Service with the United States Navy . . . Returned to Lee Moor Contracting Co. from 1919-1923 . . . During this period he was employed by that contractor in Los Angeles . . . With Basich Brothers, Torrance, and United Concrete Pipe Company, Torrance, from 1923-1931, as superintendent of various construction projects in Southern California . . . Returned again to Lee Moor Co. in El Paso, as construction superintendent, from 1931-1937 . . . January, 1937, to date, Construction Superintendent for United Concrete Pipe Company on placing of pre-cast concrete pipe, Distribution Schedules 9-P, 10-P, and 11-P . . . Is married and has two sons . . . Ranks football, and big game hunting as his favorite sports.

L. W. IRWIN

Officer Engineer, Cajalco Reservoir, Distribution Division, Metropolitan Water District.

Born in La Grange, Illinois, May 10, 1902 . . . Studied Civil Engineering at the University of Cincinnati, and at the University of Southern California . . . 1922, chainman and rodman on subdivision construction, Arrowhead Lake, California . . . 1922-1923, timekeeper and labor foreman on highway construction for Public Works Construction Company, Cincinnati, Ohio . . . 1923, chainman on subdivision construction for C. P. Day Construction Company, Pasadena, California, and transitman and computer on similiar work at Lake Arrowhead, Arrowhead Lake Company 1923-1924, computer on subdivision work for Salisbury, Bradshaw, and Taylor, Engineers, Los Angeles . . . 1924, transitman and computer on subdivision construction and hydrographic work for Lake Arrowhead Company . . . 1924-1925, draftsman, Southern California Telephone Company, Los Angeles . . . 1925-1932, Bureau of Engineering, City of Los Angeles as Junior Civil Engineer, and Assistant Supervisor, district map plotting, and sanitary sewer design . . . Has been with Metropolitan Water District since February, 1933 . . . First employed in Distribution Div. L. A. Office, and at Cajalco Reservoir as Office Engineer since December, 1935 . . . Is a 1st Lieutenant, Corps of Engineers Reserves, U. S. A. . . . Married and has two sons and a daughter . . . Answers to "Wes".

J. P. DENSMORE

Assistant Engineer, Intake and Gene Pumping Plants, Metropolitan Water District.

Born on December 18, 1898, in Charlotte, Michigan . . . Studied engineering at the University of Michigan . . . 1919-1922, chainman and instrumentman on railroad maintenance, Southern Pacific R.R., in California . . . 1922-1925, Chief of Party, Florence Lake tunnel and dam construction, Southern California Edison Co. . . . 1927- 1932, Chief of Party and Resident Engineer, on construction of transmission lines, telephone lines, substation, and shops, Southern California Edison Co. . . . With M. W. D. since December, 1932, on location and triangulation surveys, and tunnel construction in Division 1 . . . At present Assistant Engineer on Intake and Gene pumping plant construction . . . Is married and has two children . . . Nickname "Jack".

COMMUNITY CHEST RETURNS

First returns on the District's Community Chest campaign were received on November 5. These showed that the L. A. Office has contributed 75 per cent of its quota, and the Field had reached the 25 per cent mark. Final returns are due on November 10, 1937.